

an intentional radiator including an antenna and a ground plane directly connected to the antenna, the ground plane to be electrically connected to shielding by a direct solder connection between a portion of a surface of the ground plane and the shielding, the shielding including an opening for the antenna, the intentional radiator to be positioned such that the antenna radiates through the opening and the ground plane at least partially physically blocks emissions through the opening.

10 (Claim 1)(emphasis added).

Applicant respectfully submits that Ogino does not teach or suggest at least a ground plane that at least partially blocks emissions through the opening and/or that is directly connected to an antenna and electrically connected to shielding by a direct solder connection between a surface of the ground plane and shielding.

As discussed previously, Ogino discloses an integral type antenna provided with a converter function. In accordance with Ogino, a grounding plane for the antenna element is electrically connected to an upper case of a housing in order to ground the antenna element. (Ogino, col. 6, lines 64-66.)

20 Ogino also describes at column 7, lines 30-35, that part of the circuit pattern 43 that is provided on the underside surface of the multilayered substrate of Ogino simultaneously functions as a grounding plane of the frequency conversion circuit. Ogino goes on to say that part of the circuit pattern 43 is soldered to the upper case in order to establish a ground with the housing and to

25 fix the multilayered substrate to the inside of the upper case.

As shown in Figure 2 of Ogino, a housing 31, 32 is provided to house a multilayered substrate 33 that includes an antenna element 42. An octagonal opening 32d is provided in the upper case 32 to provide for the antenna element 42.

42 to partially protrude through the opening. (Ogino, col. 5, lines 19-47). It will be noted that the opening of Ogino is shown to be a similar size and shape to the antenna element 42.

In contrast, claim 1 sets forth an apparatus in which an intentional radiator 5 is positioned such that a ground plane that is directly connected to an antenna at least partially, physically blocks emissions from the intentional radiator through an opening in shielding.

It is suggested in the Office Action at page 3, paragraph 3 that Ogino discloses such a ground plane at col. 7, lines 30-37 and in Figure 3. Applicant 10 respectfully submits that this is not a fair characterization of Ogino. As far as applicant's representative can tell from the patent copy, the opening in the housing of Ogino is shown and described as being completely taken up by the antenna element 42. Thus, the ground plane 41 of Ogino that is directly connected to the antenna element 42 of Ogino is not disclosed as at least 15 partially physically blocking an opening in shielding as set forth in claim 1.

For at least the foregoing reasons, applicants respectfully submit that Ogino does not teach or suggest at least the claimed ground plane that at least partially physically blocks emissions from the intentional radiator through an opening in shielding.

20 Further, applicant respectfully submits that Ogino does not teach or suggest the claimed antenna ground plane that is directly connected to shielding by a solder connection between a portion of a surface of the ground plane and the shielding.

It is suggested in the Office Action at page 2, paragraph 1, that one or more of the ground planes 41 or 43 teaches the claimed ground plane.

Applicant respectfully submits that the ground plane 43 cannot be considered to teach the claimed ground plane because it is not directly connected to the antenna as set forth in claim 1, but rather indirectly connected to the antenna.

Further, the ground plane 41 cannot be considered to teach the claimed ground plane because Ogino does not teach or suggest that the ground plane 41 is connected to the shielding through a direct solder connection between a surface of the ground plane and the shielding.

For at least the foregoing reasons, claim 1 is patentably distinguished over the Ogino reference.

Independent claims 4, 9, 14 and 18 include a similar limitation to that argued above in reference to claim 1. Claim 3, claims 5-6 and 8, claims 10-13, 15, claim 15, and claim 19 depend from and further limit claims 1, 4, 9, 14 and 18, respectively. Thus, for the reasons discussed above in reference to claim 1, claims 3-6, 8-15 and 18-19 should also be found to be patentably distinguished over the Ogino reference for at least the same reasons.

Claims 1, 3-6, 8-15, 18 and 19 further stand rejected under 35 U.S.C. § 201 103(a) as being considered to be unpatentable over Ogino in view of U.S. Patent No. 5,691,726 to Nichols et al. ("Nichols").

Claims 1, 3-6, 8-15, 18 and 19 are patentably distinguished over Ogino for the reasons discussed above in reference to claim 1.

The combination of Nichols with Ogino does not remedy the deficiencies of Ogino.

As discussed in the previous responses, Nichols discloses a GPS/Radio antenna that includes a microstrip antenna element for one aspect including a

5 dielectric substrate, a metal radiating layer, a metal ground layer covering the bottom side of the substrate and a via to connect the radiating layer to a preamplifier. (Nichols, col. 4, lines 10-21). A printed circuit board includes a ground plane on a top side that is in electrical contact with the ground layer of the antenna element. (Nichols, col. 4, lines 41-50). The top and bottom of the

10 printed circuit board are electrically connected at an outside edge to the base using either vias or conductive material wrapped around the edge of the board. (Nichols, col. 4, line 66 – col. 5, line 4).

In contrast, as set forth in claim 1, an intentional radiator includes a ground plane having a portion of its surface directly soldered to shielding.

15 Nichols does not teach or suggest a direct solder connection between a portion of a surface of a ground plane of an intentional radiator and shielding that includes an opening through which an antenna radiates. This fact was admitted in the Office Action of 4/23/2002.

As previously argued, the vias of Nichols cannot be considered to teach or

20 suggest the claimed direct solder connection between a portion of a surface of a ground plane and shielding. The connection described in Nichols at best can be considered to be an indirect connection because the ground plane is connected

to the shielding with vias and not by a direct solder connection between a portion of the surface of the ground plane and shielding.

For at least this reason, applicant respectfully submits that claim 1 is patentably distinguished over Ogino, alone or in combination with Nichols.

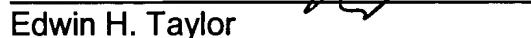
5 As argued above, independent claims 4, 9, 14 and 18 include a similar limitation as that discussed above in reference to claim 1. Claim 3, claims 5-6 and 8, claims 10-13, claim 15, and claim 19 depend from and further limit claims 1, 4, 9, 14 and 18, respectively. Thus, for the reasons discussed above in reference to claim 1, claims 3-6, 8-15 and 18-19 should also be found to be 10 patentably distinguished over the Ogino and Nichols references for at least the same reasons.

Applicant respectfully submits that the applicable objections and rejections have been overcome and claims 1, 3-6, 8-15 and 18-19 are in condition for allowance. If the examiner disagrees or believes that further discussion will 15 expedite prosecution of this case, she is invited to telephone applicant's representative, Cynthia Thomas Faatz, at (408) 765-2057.

If there are any charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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Edwin H. Taylor
Reg. No. 25,129

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025-1030
(408) 720-8300